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Recognition of bilateral neonatal testicular torsion

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SUMMARY Two cases of bilateral neonatal testicular torsion are reported and combined with 6 previously reported ones. These infants with bilateral testicular torsion are compared with neonates with unilateral torsion. Both have similar signs and symptoms: (1) a swollen bluish-red firm scrotum at birth, and (2) no evidence of spontaneous pain. Infants in neither group had any systemic symptoms. Immediate investigation with reduction is mandatory to prevent testicular atrophy.

Bilateral neonatal testicular torsion remained unrecognised until the reports of Frederick *et al.*¹ and Papadatos and Moutsouris² in 1967. Since then 4 more cases³⁻⁶ have been reported; yet, the clinical presentation has not been defined. The purpose of this report is to define the clinical features of bilateral neonatal testicular torsion and to correlate these findings with those of the more common unilateral testicular torsion.

Patients and methods

14 patients with *unilateral* testicular torsion were identified from the records over 100 years at the

Hospital for Sick Children, of which 12 were sufficiently documented for analysis. The clinical

Table 100-year review of unilateral neonatal testicular torsion. Comparison with 8 cases of bilateral neonatal testicular torsion of which 6 are cited from the literature. All patients were aged <28 days. Bilateral torsion, under surgical procedures and findings, are recorded for each side

	Unilateral(%)	Bilateral(%)	P
Perinatal			
Median gestation (weeks)	41 (n=11)	All term	—
Median weight (kg)	3.60	3.49	—
Side of involvement	(n=12) 8R:6L	(n=6) 8R:8L	—
Signs and symptoms			
Mass, firm	14/14	8/8	NS
Discoloration	9/9	8/8	NS
Blue	6/8 (75)	2/6 (33)	NS
Red	2/8 (25)	4/6 (67)	NS
Elicited scrotal pain	4/7 (57)	0/6	<0.05
Spontaneous scrotal pain	0/7	0/5	NS
Apparent abdominal pain	0/6	0/4*	NS
Vomiting	0/8	0/4*	NS
Surgical procedure and findings			
Exploration alone	± unilateral 3/14 (21) or contralateral	7/14 (50)	NS
Orchidectomy	10/14 (71)	7/14 (50)	NS
No operation	1/14 (7)	0/14	NS
Extravaginal torsion	7/9 (78)	12/14 (86)	NS

*One patient excluded due to symptomatic Hirschsprung's disease.

signs, the operative findings, and the procedures used are tabulated (Table). Two new cases of *bilateral* neonatal testicular torsion are summarised and tabulated with 6 previously reported cases. Both groups are compared as to age, gestation, weight, presence of a firm mass, scrotal discoloration, vomiting, elicited and spontaneous scrotal pain, abdominal pain, and the type of treatment given. The χ^2 method of analysis is used to determine significance ($P < 0.05$).

Case 1. A 48-hour-old infant was referred with bilateral scrotal swelling, recognised at birth. He was the product of an uncomplicated 40-week gestation and delivery. Examination was normal except for a darkish-red scrotum and bilateral swollen testes. At surgery both testes were found to be enlarged, bluish-grey in colour, and had rotated extravaginally for more than 360°. The torsions were reduced; the testes were observed not to be perfused, and thus, with reluctance, removed. Necrosis of both testes was confirmed on pathological examination. The post-operative course was uneventful.

Case 2. A 4-day-old infant was transferred with abdominal distention, bilious vomiting, and bloody stools. The scrotum was darkish-red and swollen. After stabilisation the infant was examined; blood was found in the rectal cul-de-sac and scrotum. Two weeks later the cause of the blood in the scrotum and cul-de-sac was found when the scrotum spontaneously drained old blood. He had had bilateral testicular torsion with egress of blood into the peritoneal cavity. Subsequently the infant's course was uneventful although both testicles are somewhat smaller than normal.

Results and discussion

Torsion of the neonatal testis was first described by Taylor⁷ in 1897. Altogether 24 cases of unilateral torsion had been described before the first reports of bilateral torsion¹⁻² and 55 cases were subsequently reported.⁴ The aetiology of testicular torsion remains unknown. In the neonate, the torsion is often extravaginal; whereas, in the older child, the intravaginal or bell-clapper type is seen.⁸ It is suggested that because of the loose scrotal attachment and lack of lateral stabilisation, the testis is able to rotate along its longitudinal axis.⁹

Clinically, neonates with bilateral testicular torsion are similar to those with unilateral torsion (Table): (1) the scrotum is swollen with a bluish-red colouration, (2) the testis is firm without evidence of spontaneous pain, (3) there are no systemic

symptoms, and (4) the infant is of term gestation. At surgery, the torsion is usually extravaginal and the testes necrotic.

Immediate scrotal investigation is essential for, in an animal model, Leydig cells become totally necrotic after 10 hours of vascular occlusion.¹⁰ Other causes of testicular swelling in this age group are acute hydrocele, haematoma, strangulated inguinal hernia, epididymitis or orchitis, testicular tumour, and meconium peritonitis with a patent processus vaginalis, but all these are rare.¹¹

The data support the thesis that neonatal testicular torsion, both unilateral and bilateral, is recognisable. The outcome bears a direct relationship to the time of testicular strangulation. Although atrophy occurred in 9 of 11 testes which were left *in situ* after exploration for bilateral testicular torsion, every effort should be made to salvage the testes. There is no place for expectant observation.

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